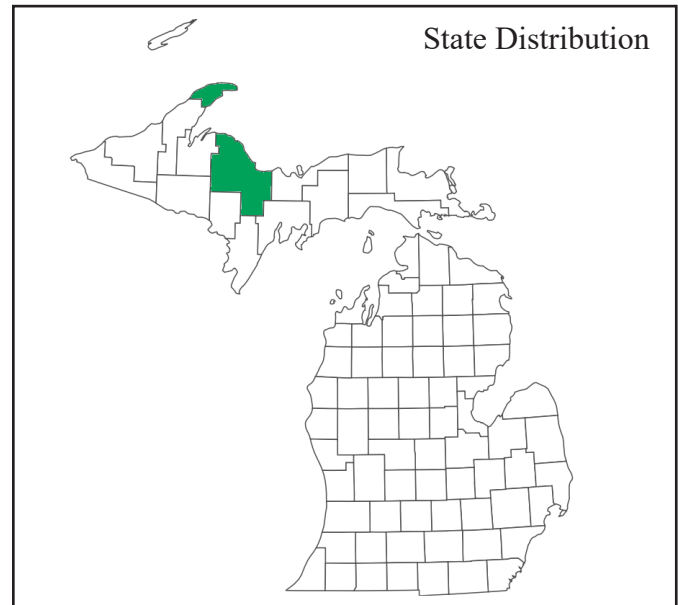
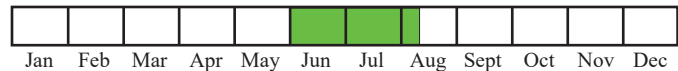


Photograph by [Nate Martineau](#), iNaturalist



Best Survey Period



Legal status: State Threatened

Global and State rank: G5 (Globally Secure) / SNR (State Not Ranked)

Other common name(s): Red cottongrass, smooth-fruited russet cottongrass, white-bristled russet cottongrass.

Family: Cyperaceae (sedges)

Synonyms: *Eriophorum russeolum* Fr. subsp. *leiocarpum* Novoselova, *Eriophorum chamissonis* C.A.Mey. *E. russeolum* var. *albidum* F. Nylander, *E. chamissonis* var. *albidum*. F. Nylander,

Taxonomy: The genus *Eriophorum* is in the family Cyperaceae, or the sedge family. The species russet cottongrass (*Eriophorum russeolum*) was once considered the same as Chamisso's cottongrass (*E. chamissonis*), but they have since been distinguished as a separate species with a differing geographical distribution and morphology. Chamisso's cottongrass is restricted to northwestern North America while russet cottongrass occurs in both northern North America and Eurasia (Cay-

outte 2004). Russet cottongrass can be divided into two subspecies: subsp. *russeolum* and subsp. *leiocarpum*, the latter is the subspecies we have in Michigan (Reznicek et. al. 2011, Routledge et. al. 2020). The two subspecies can be distinguished by color with subsp. *russeolum* bearing orange-brown bristles and subsp. *leiocarpum* bearing white or cream.

Total Range: The subspecies of russet cottongrass found in Michigan ranges from northeastern Russia, across the northern and eastern Canadian provinces, into northern Minnesota and Wisconsin, and, as discovered in 2019, the Upper Peninsula of Michigan (Cayoutte 2004, Routledge et. al. 2020). It is considered Secure (S5) in Ontario; Apparently Secure (S4) in the Yukon, the Northwest Territories, and Nunavut; Vulnerable (S3) in Quebec, Imperiled (S2) in New Brunswick, and Critically Imperiled (S1) in Wisconsin (NatureServe 2023). There are discrepancies in conservation status, however, depending on the preferred name or synonym utilized by the state or province.

State Distribution: Russet cottongrass has been found in only two sites in the Upper Peninsula of



Michigan. One is located in Keweenaw County and the second in Marquette County.

Recognition: Russet cottongrass is **strongly rhizomatous** and capable of forming large, clonal colonies. It is variable in height, ranging 9 – 70 cm (3.5 – 28 in) tall. Stems are terete in cross-section and up to 1.5 mm (0.06 in) in diameter. Leaves are few and primarily basal with few cauline leaves usually reduced to papery, brown sheaths. The inflorescence consists of a **single, ovoid head** of multiple florets that reaches 1.5 – 3.5 cm (0.6 – 1.4 in) in length. Each floret has numerous off-white perianth bristles and is subtended by a single scale. The lowermost scales on the spikelet head are usually infertile and slightly more prominent in size and venation than their fertile counterparts. The lowermost sterile scale has 3 – 10 prominent ribs and is larger (1 – 2 cm [0.4 – 0.8 in]) than the other floral scales (4 – 7 mm [0.2 – 0.3 in]). As fruits mature, the perianth bristles elongate to 2.5 – 3.5 cm (1 – 1.4 in). The fruit is a brownish, obovoid or ellipsoid achene that is mildly triangular in cross-section and generally 2 – 2.7 mm (0.07 – 0.1 in) long. The tip of the fruit abruptly contracts to a **short, but obvious beak**.

With its solitary, white, cottony flowerhead, russet cottongrass could be mistaken for tussock cottongrass (*Eriophorum vaginatum*) or smaller plants for alpine bulrush (*Trichophorum alpinum*). Michigan's other cottongrass species all have multiple heads per inflorescence. Tussock cottongrass can be distinguished from russet cottongrass by habit, achene shape, and lowermost floral scale. Russet cottongrass is rhizomatous, not caespitose, has a distinct beak on the achene, and has longer lowermost floral scale with more veins than tussock cottongrass. Alpine bulrush differs from russet cottongrass, and most other cottongrasses, in its number of bristles per achene. Alpine bulrush typically has six bristles per achene while cottongrasses have 15-20.

Best survey time/phenology: Russet cottongrass is readily identifiable between June and August when

it is flowering and fruiting. Experienced botanists may be able to identify the species outside of flowering and fruiting time by its rhizomatous habit. Flowering and fruiting phenology may vary locally.

Habitat: Across its range, russet cottongrass is known to occur in boreal, alpine, and arctic regions within fens, bogs, along lake and marsh margins, near beaver floodings, and on floating vegetation mats (COMH 2025). Within Michigan, it is only known to occur in two locations, and both are poor fens that are part of larger fen-conifer swamp complexes. The most common associate species at both sites include coastal sedge (*Carex exilis*), wiregrass sedge (*Carex lasiocarpa*), and water horsetail (*Equisetum fluviatile*), speckled alder (*Alnus incana*), chokeberry (*Aronia prunifolia*), bog birch (*Betula pumila*), leatherleaf (*Chamaedaphne calyculata*), bog-laurel (*Kalmia polifolia*), and tamarack (*Larix laricina*). Additional associates include white-cedar (*Thuja occidentalis*), shrubby cinquefoil (*Dasiphora fruticosa*), rattlesnake grass (*Glyceria canadensis*), creeping sedge (*Carex chordorrhiza*), inland sedge (*Carex interior*), livid sedge (*Carex livida*), dragon's mouth orchid (*Arethusa bulbosa*), wild blue flag (*Iris versicolor*), bogbean (*Menyanthes trifoliata*), bog aster (*Oclemena nemoralis*), pitcher-plant (*Sarracenia purpurea*), and other cottongrass species (Routledge et. al. 2020).

Biology: Little is known about the species biology and ecology of russet cottongrass, or cottongrasses in general. It is a rhizomatous, perennial that is restricted to northern latitudes and is an obligate wetland species. The lack of showy flowers and formation of plumose bristles indicate the species is wind-pollinated and wind-dispersed (Lye 2016). The achene has microscopic structure on the outer layer of cells created by miniscule concentrations of silica. This structure is apparently unique to each species and can be utilized to identify fossilized material (Tucker and Miller 1990). Cottongrass vegetative structures are comprised of a specialized tissue called aerenchyma that contains air sacks to better allow for gas exchange while roots are submerged in water. Aerenchyma can also support



microorganisms that can improve phytoremediation of certain toxins (Xin et al. 2019, Paul et al. 2025). Russet cottongrass may form mycorrhizal associations, as the closely related tussock cottongrass appears to do so, although such associations appears to be more uncommon in wetland sedges (Muthukumar et. al. 2004).

Conservation/management: Michigan and species-specific management practices are unknown for russet cottongrass but should default to the conservation and preservation of its habitat. It is imperative to maintain the hydrological regime of fens, which are groundwater-fed systems. Disruptions in water flow can cause drastic and detrimental changes to vegetation composition. Anthropogenic disturbances such as off-road vehicle use, development, and some logging methods can damage hydrology and vegetation as well as introduce invasive species and pollutants. Invasive species infestation can threaten fen systems through light reduction, crowding, and resource competition. Common invasive species include glossy buckthorn (*Frangula alnus*), reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis* subsp. *australis*), narrow-leaved cat-tail (*Typha angustifolia*), European marsh thistle (*Cirsium palustre*), and purple loosestrife (*Lythrum salicaria*). Fire suppression and lower water levels across the landscape can degrade fen habitats and allow for woody encroachment that had been historically managed by fire and/or consistent groundwater flow. Woody species management via mechanical removal or prescribed fire may be necessary to preserve the habitat. Frequent monitoring is necessary for successful management. (WDNR 2025, Cohen and Kost 2010).

The russet cottongrass populations found within Michigan are at the southernmost extent of its range, and these populations likely possess differing genetics from the core population (Lesica and Allendorf 1995). Unique genetics, like those found in peripheral populations, are important to preserve for the resilience and representation of the species.



Figure 1. Russet cottongrass achene with beak.

Comments: The genus name *Eriophorum* is derived from the Greek words ‘erion,’ for wool or cotton, and phoros, for bearer (Ball and Wujek 2020).

Research needs: More surveys are needed to understand the full extent of Michigan’s populations of russet cottongrass. It is likely there are more populations in the Upper Peninsula of Michigan outside of the two known occurrences. Surveys are necessary to determine the species’ full range and prevalence in the larger landscape and to assess known population and species viability. Population genetic studies can reveal more on the evolutionary history and adaptations the peripheral populations in Michigan have compared to the populations in the rest of its range as well as other subspecies. More natural history research is needed to better understand the biology and ecology of the species with focus on insect and animal interactions. The effects of management practices, specifically prescribed fire on russet cottongrass, or cottongrasses in general, is needed.

Related abstracts: Poor fen, bog, sweet coltsfoot, dwarf raspberry, black crowberry, moose, American bittern, Frigga fritillary





Figure 2. Michigan population of russet cottongrass.

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